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The Modern Athlete: Natural Athletic Ability or Technology at Its Best

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THE MODERN ATHLETE: NATURAL ATHLETIC ABILITY OR TECHNOLOGY AT ITS BEST?

I. INTRODUCTION

Sports have been described as a "microcosm of society."[1] Due to outstanding participation, attendance at events and vast amounts of knowledge held by many, the sporting arena has become a "cultural phenomena."[2] Sports reflect both positively and negatively on society.[3] Athletes possess various influential attributes that make them role models in today's society.[4] They voluntarily enter the competitive arena, which requires submission to both the rules of society and the specific rules of that arena.[5] Various private rules and public laws regulate both professional and amateur athletics.[6] Additionally, established rules concern all aspects of a sporting activity.[7]

A competitive athlete has been defined as "one who participates in an organized team or individual sport that requires regular

1. SPORTS AND THE LAW: A MODERN ANTHOLOGY 9 (Timothy Davis et al. eds., 1999) (discussing sports as reflection of society's laws and values).

2. *See* Matthew J. Mitten, *Forward to Sports Law as a Reflection of Society's Laws and Values,* 38 S. TEX. L. REV. 999, 999-1000 (1997) (noting that reciprocal relationship exists between today's societal values and sports).

3. *See id.* at 999. The positive reflection of sports on society's values include those attributed to success: "discipline, commitment, motivation and hard work." *Id.* Sports also reflect negatively on societal values due to the over-emphasis on winning and economic rewards. *See id.*

4. *See* Ellen E. Dabbs, *Intentional Fouls: Athletes and Violence Against Women,* 31 COLUM. J.L. & SOC. PROBS. 167, 172-73 (1998) (discussing elevated social status of athletes). Participation in sports encourages teamwork, cooperation, performance to one's highest ability and fair play. *See* Mitten, *supra* note 2, at 999. Combined with discipline, commitment and motivation, these attributes demonstrate positive societal values. *See id.*

A perception exists that the sports world encompasses "a place in which none of the normal problems of the 'real' world could possibly exist." Paul M. Anderson, *Racism in Sports: A Question of Ethics,* 6 MARQ. SPORTS L.J. 357, 357 (1996). Fans believe that sports focus on ability, and trivial problems do not exist. *See id.*

5. *See* Richard W. Pound, *Performance-Enhancing Drugs in Sport: Response by the International Sports Community,* 55 CANADIAN INST. OF INT'L AFFAIRS: INT'L J. 485, 485 (June 2000) (discussing sport as consensual activity by individuals agreeing to governed rules).

6. *See* Mitten, *supra* note 2, at 1000 (stating that society's values and policy considerations influence such laws).

7. *See id.* Examples of rules include definitions, rules of play, nature of permissive equipment, ages and general matters pertinent to a specific sport. *See id.*

competition against others as a central component, places a high premium on excellence and achievement and requires vigorous training in a systematic fashion."[8] Over time, technological advancements have propelled athletic competition to new levels.[9] Consequently, athletes are forced to meet minimum requirements in order to remain competitive.[10] Because the rules of sport are a reflection of society, cheating will inevitably occur, either to help athletes remain competitive or increase their athletic ability.[11] Over the years, the various athletic organizations have attempted to regulate the use of inappropriate performance-enhancing substances.[12] It is widely accepted that drug use in the sports arena is intolerable; therefore, athletes face various drug tests.[13]

Although various laws and the governing athletic bodies regulate performance-enhancing drugs, no such regulations exist concerning the use of technological innovations in athletics; therefore, a debate has ensued.[14] This debate centers on athletes' desires to reach higher levels of performance, new and increased competition and continuous developments.[15] The two sides of the debate are

8. Barry J. Maron et al., *Introduction to 16th Bethesda Conference: Cardiovascular Abnormalities in the Athlete: Recommendations Regarding Eligibility for Competition*, 6 J. AM. C. CARDIOLOGY 1189, 1189 (1985); *see also* Matthew J. Mitten, *Team Physicians and Competitive Athletes: Allocating Legal Responsibility For Athletic Injuries*, 55 U. PITT. L. REV. 129, 133 (1993) (noting athletes' desires to play their respective sports).

9. *See generally* Kim Clark & Robert Milliken, *Today, It's 'May the Best Swimsuit Win'*, U.S. NEWS & WORLD REP., Aug. 21, 2000, at 55 (contending motto of 2000 Olympics to be "more Lycra, more high-tech, more gadgets").

10. *See* Bob Phillips, *Brute Force Racquets, at* http://espn.go.com/tennis/a/011200Racquets.html (Feb. 8, 2000) (claiming athletes will have to match competitor's ability and technology to participate).

11. *See* Pound, *supra* note 5, at 485. Because sports have become an important part of society, the "laws of the land pertaining to the use of certain substances and procedures that are regulated, civilly or criminally, necessarily have primacy over the rules of sport agreed to privately." *Id.* It is inevitable that cheating will occur in the sporting arena because cheating occurs in other social activities. *See id.*

12. *See* Steven O. Ludd, *Athletics, Drug Testing and the Right to Privacy: A Question of Balance*, 34 How. L.J. 599, 599 (1991) (recognizing increased drug use within high school, collegiate and professional sports). For a complete discussion of performance-enhancing drug regulations, see *infra* notes 29-62 and accompanying text.

13. *See* Ludd, *supra* note 12, at 599. Even though each sporting segment is subject to various legal standards, high school, collegiate and professional sports have drug-testing procedures that rely on some form of mandatory testing. *See id.* For instance, professional athletes' contracts include provisions that penalize them for a positive result on a drug test. *See id.* at 618.

14. For a discussion of controversial technological innovations, see *infra* notes 75-114 and accompanying text.

15. *See* Clark & Milliken, *supra* note 9 (contrasting legality of enhanced performance through use of new clothing, equipment and training systems with using stimulants and steroids).

the long-standing tradition of permissive use of innovative ideas and the questionable fairness of the various technologies due to accelerated performance and advantages to the wealthy.[16]

This comment focuses on the opposing viewpoints concerning the rapid use of technology in sports.[17] Part II provides background information and examples of regulations, as well as controversies, within the athletic arena.[18] Part III discusses the current controversy surrounding the use of new technologies in various sports.[19] Part IV offers solutions to govern the use of technological innovations because technology will continue to enhance athletes' ability.[20]

II. BACKGROUND

A. Current Regulations on Enhancing Performance

Substance abuse by athletes for performance-enhancement became a recognized problem in the 1960s with the wide use of steroids.[21] All levels of athletics have recognized drug use as a dominant issue.[22] Therefore, organizations established resolutions

16. *See id.* (noting increased innovations in 2000). Specifically, the author provides three examples of products that created controversy for the Sydney Olympics: long-john swimsuit, sprinters' hooded suit and nitrogen tents. *See id.* The article noted that new products may give the "tech-savvy" United States and wealthier nations a distinct advantage over less fortunate nations. *See id.*

17. For a discussion of the opposing viewpoints concerning the technologies, see *infra* notes 115-46 and accompanying text.

18. For an examination of the current regulations, see *infra* notes 29-62 and accompanying text. For a complete discussion of the existing controversies, see *infra* notes 63-114.

19. For a discussion of the controversial sides with respect to technology, see *infra* notes 115-46 and accompanying text.

20. For a discussion of possible solutions to standardize technology, see *infra* notes 147-61 and accompanying text.

21. *See* Duncan Mackay, *Steroids and Their Scary Successors,* THE GUARDIAN (London), Sept. 7, 2000, at Home 3 (discussing development of drugs used by athletes in order to avoid detection).

22. *See* Hill v. NCAA, 865 P.2d 633, 637-39 (Cal. 1994) (discussing NCAA's history in adopting drug testing procedures); David Sitz, *To Play or Not to Play: Substance Abuse Policies of Three Major Sports Leagues, in* SPORTS AND THE LAW: MAJOR LEGAL CASES 78-84 (Charles E. Quirk ed., 1996) (discussing professional sports' adoption of substance-abuse policies); OLYMPIC CHARTER AGAINST DOPING IN SPORT, International Olympic Committee's Position, *at* http://www.nodoping.olympic.org/position_cio_e.html (last visited Oct. 22, 2001) [hereinafter OLYMPIC CHARTER AGAINST DOPING IN SPORT] (summarizing principal actions leading to adoption of current drug regulations).

For example, among the International Committees governing amateur athletics, drug testing is a grave concern requiring immediate and substantial attention. *See* 2 ROBERT C. BERRY & GLENN M. WONG, LAW AND BUSINESS OF THE SPORTS INDUSTRIES: COMMON ISSUES IN AMATEUR AND PROFESSIONAL SPORTS 603-04 (2d ed. 1993). The International Olympic Committee ("IOC") has adopted a procedure that per-

for substance use through education and prevention.[23] The law is well established that drug testing is permissible and does not violate an individual's privacy rights.[24] Despite the private nature of athletic regulatory bodies, parties have attempted to challenge the organizations' authority to enact drug-testing rules, but these challenges have proven unsuccessful.[25] Currently, participants accept the drug testing policies set forth by the various athletic governing bodies, despite questions concerning their authority.[26]

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mits athletes to be tested at anytime, regardless of whether competition is occurring. *See id.* at 604. Following the IOC's lead, the United States Olympic Committee ("USOC") has adopted a drug-testing program that permits eligible athletes to be subjected to testing regardless of performance status. *See id.* at 604-05 (discussing components of program and identifying major drug categories).

23. For a complete discussion of resolutions adopted by various athletic organizations, see *infra* notes 29-62 and accompanying text.

24. *See* Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 633 (1989) (holding government's compelling interest deemed drug testing measures as reasonable); Nat'l Treasury Employees Union v. Von Rabb, 489 U.S. 656, 679 (1989) (holding suspicionless drug testing does not violate individuals' privacy interests because of government's compelling interest).

Today, drug testing is permitted; however, initially, concerns surrounding privacy interests questioned the tests' validity. *See Skinner*, 489 U.S. at 617. The Fourth Amendment provides "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures . . . ." U.S. CONST. amend. IV. The Supreme Court has held that "the collection and testing of urine intrudes upon expectations of privacy that society has long recognized as reasonable;" therefore, implicating the Fourth Amendment as a necessary determination when addressing the validity of drug tests. *Skinner*, 489 U.S. at 617. Although a private party is not affected by the restrictions of the Fourth Amendment, no matter how arbitrary their action may be, the Amendment protects against intrusions by a private party that acts as a government agent, which is determined by an evaluation of the government's participation. *See id.* at 614.

The Supreme Court extended the previous drug testing holdings to high school athletics in *Vernonia School District v. Acton*. *See Vernonia*, 515 U.S. 646, 664-65 (1995) (warranting drug testing of student athletes absent individualized suspicion). The Court reiterated that students participating in high school athletics have a diminished expectation of privacy because athletics are not for the "bashful" and students subject themselves to a higher degree of regulation. *See id.* at 657.

25. *See* O'Halloran v. Univ. of Wash., 679 F. Supp. 997, 1007 (W.D. Wash. 1988) (concluding interests of University and NCAA to protect student athletes and ensure fair competition outweigh individual privacy interests); *Hill*, 865 P.2d at 641 (discussing courts' recognition that NCAA is private entity comprised of various colleges and universities).

26. *See generally* 2 BERRY & WONG, *supra* note 22, at 567-617 (discussing various athletic organizations that perform drug tests, including NCAA, International Governing Bodies and Interscholastic Programs); *see also* 2000-2001 NCAA MANUAL, § 18.4.1.5.2 (2001) [hereinafter NCAA MANUAL] (stating Executive Committee adopts banned drugs and testing protocol for member institutions); Sitz, *supra* note 22, at 78-84 (addressing measures taken in professional sports that attempt to educate and eliminate drug use); WORLD CONFERENCE ON DOPING IN SPORTS, LAUSANNE DECLARATION ON DOPING IN SPORTS, *available at* http://www.nodoping.olympic.org/Declaration_e.html (Feb. 4, 1999) (establishing declarations regarding anti-doping code, sanctions and responsibilities of federations).

Regardless of the governing body, virtually every sport has mandated that participation in competition is contingent upon the successful completion of a drug test.[27] The following reasons represent typical justifications for mandatory drug testing among athletes: "(1) the health and welfare of the athletes, (2) the need to maintain the integrity of the sport, and (3) the importance of protecting the public's financial interest in some forms of sporting activities."[28]

1. *Professional Sports*

Due to the increased use of drugs, the majority of professional sports leagues have created and implemented substance-abuse policies.[29] The emphasis on drug testing in professional sports does not rely heavily on the same justifications asserted for testing at other levels of athletics.[30] Due to the belief that professional sports operate as private business enterprises, courts typically view contractual principles as binding on them.[31]

The drug policy adopted by the National Basketball Association ("NBA") is viewed as the model for all other professional sports' programs.[32] The NBA's program focuses on education by

27. *See* Ludd, *supra* note 12, at 599 (stating increase in drug use in all sports arenas, including high school, collegiate and professional levels). Despite the varying degree of legality in each sport's arena, some form of drug testing has been established. *See id.* For instance, local boards of education, the National Collegiate Athletic Association ("NCAA") and the National Basketball Association ("NBA") impose such drug protocols. *See id.*

28. *Id.* at 617 (articulating reasons for implementation of drug testing procedures).

29. *See* Sitz, *supra* note 22, at 78 (stating range of professional athletes using drugs is between fifty and seventy percent). For instance, the NBA enacted a plan in 1983 to eliminate drug use within the league. *See id.* (noting program was pioneer in field). The goals of the program included prevention and education; detection and discipline; and treatment. *See id.*

30. *See* Ludd, *supra* note 12, at 617 (asserting that professional sports is "unquestionably a business venture"). For the justifications asserted for implementing drug testing policies, see *supra* note 28 and accompanying text.

A driving force of professional sports is attaining profits; therefore, drug-testing programs result from collective bargaining that occurs between owners and players' associations. *See* Ludd, *supra* note 12, at 618. Because contract principles regulate the professional sports' industry, collective bargaining negotiates the conditions of employment, which include provisions regarding drug testing. *See id.* at 617 n.77.

31. *See* Ludd, *supra* note 12, at 618 (explaining individual rights to privacy and against self-incrimination in private business does not receive as much protection as compared to public sector).

32. *See* Sitz, *supra* note 22, at 80 (noting that each league has relatively same goals but approaches them differently). For a further discussion on the initial goals of the organization's policy, see *supra* note 29.

requiring attendance at anti-drug seminars during each season.[33] In addition, rookies must attend an orientation before their first season commences.[34] In the event that drug abuse becomes a problem, the professional clubs provide assistance to their players.[35] This treatment begins with intensive counseling that uses various techniques.[36] Following the counseling, an "aftercare plan" is established, which the athlete must follow.[37]

The program instituted by the National Football League ("NFL") has two distinct focuses: anabolic steroids and other drugs.[38] The program requires testing prior to the season's commencement followed by random testing, by computer selection, throughout the season.[39] Following a positive test result, a player receives a medical evaluation and becomes subject to a treatment program.[40] Players can enter the treatment program in three possible ways: "positive urinalysis for drugs of abuse, medical director

33. *See* Sitz, *supra* note 22, at 78-79 (discussing typical seminars that players attend annually). These seminars educate players on the dangers of drugs, detecting a problem among teammates and how to come forward to a counselor in the event of a problem. *See id.* at 78. Coaches and managers also attend sessions to learn how to detect possible problems and deal with them. *See id.*

34. *See id.* at 79 (noting rookies must attend two day seminar).

35. *See id.* (stating problems exist despite education and prevention methods). Under NBA rules, if a player voluntarily comes forward for treatment, the club will assume the costs of treatment and counseling, and the player continues to receive compensation. *See id.* Furthermore, should a lapse occur and the player again comes forward voluntarily, the player will be suspended without pay but will receive additional treatment. *See id.* Upon a third time, the player will be suspended from the league for two years and will only be reinstated with approval by the NBA Commissioner and the Players Association. *See id.* Thus, players have great incentive to voluntarily come forward with a drug problem. *See id.*

36. *See id.* (discussing stages of treatment program).

37. *See id.* Once the treatment is completed, the player takes part in an aftercare plan that requires him to attend self-help groups. *See id.* These groups are available throughout the country during the season and while traveling on the road. *See id.* (noting that player will automatically be suspended for failure to abide by plan).

38. *See* Sitz, *supra* note 22, at 80 (explaining NFL's two principle focuses of substance abuse program). The use of anabolic steroids, derivatives of the male testosterone hormone, is illegal and banned by most sports organizations. *See* Dr. Gary Wadler, *Anabolic Steroids, at* http://espn.go.com/special/s/drugsandsports/steroids.html (Sept. 6, 2000) (discussing athletes' persistence in taking steroids because of belief that they provide competitive advantage).

39. *See* Sitz, *supra* note 22, at 80 (mentioning additional testing occurs for reasonable cause based on prior positive test results). During the season, the first positive test for steroids results in a four game suspension. *See id.* If the result occurs during the preseason, the suspension is for two weeks. *See id.* A second positive test suspends a player for six games, and a third positive test results in a one-year suspension, with reinstatement only after the full time has passed. *See id.*

40. *See id.* (noting more positive tests result in increased treatment). For further discussion of the NFL's treatment program, see *infra* notes 41-43.

determination based on behavioral assessment and self-referral."[41] The NFL's program consists of three phases.[42] Although the testing procedures are extensive under the NFL's plan, critics claim that the focus is on the testing procedures, not prevention and education.[43]

Major League Baseball's ("MLB") drug program attempts to preserve the health and welfare of participants, as well as protect baseball's integrity.[44] The policy has a player assistance program available that provides basic education, expert counseling and rehabilitation according to a player's needs.[45] Testing procedures differ for the various competitive levels within the baseball league.[46] Although positive drug tests subject a player to a treatment program, there is no suspension or loss of pay.[47]

2. *International Olympic Committee*

The International Olympic Committee ("IOC") was established to coordinate and supervise the Olympic Movement, a devel-

41. *NFL Policy and Program for Substances of Abuse, at* http://sports.findlaw.com/drugs/policy/football (last visited Oct. 30, 2001) (summarizing phases of substance policy program instituted by NFL). The NFL's policy allows an athlete to make a self-referral, which is similar to the NBA's program of allowing athletes to come forward voluntarily. *See* Sitz, *supra* note 22, at 80.

42. *See NFL Substance Abuse Policy, at* http://axe.acadiav.ca/~039092b/drugpolicy.html (last visited Oct. 27, 2001). Stage one requires an evaluation by a psychiatrist and a mandatory treatment contract, and the failure to cooperate or comply results in a three-game check fine. *See id.* Stage two allows ten urine tests per month for two years at the discretion of a medical advisor. *See id.* The first positive result in stage two results in a four-game check fine, while the second is a four-game suspension without pay. *See id.* Stage three allows ten urine tests per month for three years under the supervision of the medical advisor, and any positive test is banishment for a minimum of one year. *See id.*

43. *See* Sitz, *supra* note 22, at 81 (distinguishing NFL's and NBA's policies because NBA allows for education and prevention to combat drug problems).

44. *See id.* at 81 (noting policy protects game of baseball and those individuals that work within sport). The program receives criticism because it lacks specific guidelines for disciplinary action. *See id.* at 82. The MLB allows repeat offenders to remain in the game, which is significantly distinguishable from the NBA and NFL. *See id.* For a further discussion on the penalties imposed by the NBA and the NFL, see *supra* notes 35-43.

45. *See* Sitz, *supra* note 22, at 81 (noting MLB has implemented independent testing program to provide assistance to its members).

46. *See id.* at 81-82. The differentiation between testing procedures is that major league players are not subject to random testing during their careers, whereas minor league players are within a computer database that selects names at random. *See id.*

47. *See id.* Although a player is not suspended and continues to receive payment when a positive drug test occurs, a player will be subject to mandatory testing throughout his career. *See id.*

opment of a supreme ethical platform for the practice of sport.[48] Although the IOC's sole function is to control the Olympic Games, which permits drug testing, it has attempted to persuade other international organizations to adopt similar rules to combat the ever-present problem of drug use within the athletic world.[49] The IOC has fought "doping" in sports as early as 1960 due to concern for the health of athletes and the erosion of ethics.[50]

The Olympic Movement Anti-Doping Code, as effective on January 1, 2000, has the primary focus and goal to eliminate doping in sport through education of ethics and dangers.[51] Today, the Anti-

48. *See* INTERNATIONAL OLYMPIC COMMITTEE, The Olympic Movement, *at* http://www.olympic.org/ioc/e/org/ioc/ioc_move_e.html (last visited Oct. 22, 2001) (discussing development of IOC to raise sports' development to international level). The IOC's only function is to control the Olympic Games because all other sport functions are organized by other federations, which include International Federations (world championships), National Federations (national championships) and National Olympic Committees (Olympic trials). *See id.* at Introduction.

The IOC and Olympic Movement's purpose "is to contribute to building a peaceful and better world by educating youth through sport, practiced without discrimination of any kind and in the Olympic Spirit, which requires mutual understanding, friendship, solidarity and fair play." *Id.* (citing to Olympic Charter, which contains fundamental principals and ideals of organization).

49. *See* INTERNATIONAL OLYMPIC COMMITTEE, The Olympic Movement, *at* http://www.olympic.org/ioc/e/facts/charter/charter_movement_e.html (last visited Oct. 22, 2001).

50. *See* OLYMPIC CHARTER AGAINST DOPING IN SPORT, *supra* note 22. Doping is "(1) the use of an expedient . . . potentially harmful to athletes' health and/or capable of enhancing their performance, or (2) the presence in the athlete's body of a Prohibited Substance or evidence thereof or evidence of the use of a Prohibited Method." OLYMPIC MOVEMENT ANTI-DOPING CODE, *available at* http://www.olympic.org/ioc/e/org/medcom/pdf/doping_code_e.pdf (last updated May 28, 2000), ch. II, art. 2, at 6 [hereinafter ANTI-DOPING CODE].

In the late 1950s, a systematic use of performance-enhancing drugs became evident because testosterone was known to assist in the building of bulk and strength. *See International Summit: Drugs in Sport Policy Commitment, at* http://www.nodoping.olympic.org/drug_summmit/drug_summit_policy_commit.pdf (last visited Oct. 22, 2001). Shortly after, a medical commission was created in order to establish banned substances for the Olympic Games. *See id.* In May 1967, the Medical Commission identified the basic principles of combating doping as protecting athletes' health, sports' ethics and equality in competition. *See id.* In 1968, the first drug tests were performed at the Winter Games in Grenoble, which expanded the list of banned substances. *See id.*

In the 1980s, an accreditation process was introduced in order for laboratories to ensure a high level of accuracy for testing methods, which led to the accreditation of six laboratories. *See id.* The number of laboratories has increased over the years, with twenty-seven currently existing throughout the world. *See id.* In June 1988, the first World Conference on Anti-Doping in the Sport occurred, which has continued ever since. *See id.*

51. *See* ANTI-DOPING CODE, *supra* note 50, Preamble, at 3. Because the Olympic Movement has a duty to protect athletes' health and uphold the ethics of sports, doping is prohibited; therefore, tests and sanctions must be established. *See id.*

Doping Code provides testing procedures, as well as the applicable sanctions and determinations to be made upon a positive resulting test.[52]

3. *NCAA*

The National Collegiate Athletic Association ("NCAA") is comprised of approximately 1,200 institutions, conferences, organizations and individuals for the purpose of administering collegiate athletics in an organized fashion.[53] The NCAA is recognized as a private association created for regulating intercollegiate athletics.[54] In 1973, the NCAA enacted the first prohibition on drug use by

52. *See id.*, ch. VI, art. 1-5 (identifying procedures for collection and analysis of athletes' tests and IOC Executive Board is only body to rule on positive result during Games). The Code identifies selection of athletes, which must be ascertained before the beginning of the Games, and the subsequent procedures that must be adhered to for sampling. *See id.* at app. C.

53. *See What is the NCAA?, at* http://www.ncaa.org/about/what_is_the_ncaa.html (last visited Oct. 22, 2001) (defining organization's purpose as integrating and maintaining athletics as part of educational institutions).

The purposes of the NCAA are defined as the following:

- To initiate, stimulate and improve intercollegiate athletics programs for student-athletes and to promote and develop educational leadership, physical fitness, athletics excellence and athletics participation as a recreational pursuit.
- To uphold the principle of institutional control of, and responsibility for, all intercollegiate sports in conformity with the constitution and bylaws of the Association.
- To encourage its members to adopt eligibility rules to comply with satisfactory standards of scholarship, sportsmanship and amateurism.
- To formulate, copyright and publish rules of play governing intercollegiate athletics.
- To preserve intercollegiate athletics records.
- To supervise the conduct of, and to establish eligibility standards for, regional and national athletics events under the auspices of the Association.
- To legislate, through bylaws or by resolutions of a Convention, upon any subject of general concern to the members related to the administration of intercollegiate athletics.
- To study in general all phases of competitive intercollegiate athletics and establish standards whereby the colleges and universities of the United States can maintain their athletics programs on a high level.

Purposes and Goals of NCAA, at http://www.ncaa.org/about/purposes.html (last visited Oct. 22, 2001).

54. *See* Hill v. NCAA, 865 P.2d 633, 637 (Cal. 1994) (discussing that member institutions enact rules in collective and democratic fashion). In order to participate in NCAA events, members must abide by the NCAA rules. *See id.*

Since the Supreme Court has recognized the NCAA as a private organization, actions in response to the organization's regulations cannot assert that the NCAA is a government instrumentality or a state actor thereby invoking privacy interests. *See* NCAA v. Tarkanian, 488 U.S. 179, 197 (1988) (establishing NCAA as private actor); *see also Hill*, 865 P.2d at 641 (confirming NCAA is governed by its membership, not states).

student-athletes, who are heavily regulated in college athletics.[55] The NCAA created a drug-testing program in order to promote fair and equitable competition, as well as protect student-athletes' health.[56] Furthermore, the NCAA by-laws contain various sections discussing eligibility, consent to testing procedures and banned substances.[57] In addition, current regulations provide intercollegiate athletes with a full understanding of the process.[58] Therefore,

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55. *See Hill*, 865 P.2d at 638 (discussing development of drug use ban among college student-athletes). In 1983, the USOC enacted a drug-testing program modeled after the IOC's program due to positive tests of prohibited substances at the Pan American Games. *See id.* At this time, the NCAA followed the USOC in initiating studies to determine drug use among athletes. *See id.*

Michigan State University conducted a nationwide survey of drug use among student-athletes pursuant to the NCAA's request. *See id.* In January 1984, this survey led to a resolution, requesting the NCAA to adopt a drug-testing program. *See id.* Due to the resolution, the NCAA appointed a committee to study drug use and testing. *See id.* The committee concluded:

> The NCAA has a legitimate interest in maintaining the integrity of intercollegiate athletics, including insuring fair competition and protecting the health and safety of all participating student athletes. The use of 'performance enhancing' drugs by individual student-athletes is a violation of the ethic of fair competition, [and] poses a potential health and safety hazard to those utilizing such drugs and a potential safety hazard to those competing with such individuals. The most effective method of ensuring that student-athletes are not utilizing 'performance enhancing' drugs is through a consistent, national drug testing program.

Id.

At their 1986 convention, the NCAA adopted a drug-testing program, following revisions from the previous year's proposal, and the program has continued since its enactment. *See id.*

56. *See NCAA Drug-Testing Program*, Introduction, *at* http://www.ncaa.org/sports_sciences/drugtesting/ (last visited Aug. 30, 2001) (demonstrating organization's commitment to fair competition and athletes' health as official at January 1986 NCAA Convention). The drug program consists of the collection of urine and its analysis for substances listed as banned due to performance-enhancement ability and/or potential harm to health and safety of athletes. *See id.*

57. *See* 2000-2001 NCAA MANUAL, §§ 14.1.1.1, 14.1.4.1, 18.4.1.5, 18.4.1.5.2 (2001). Section 14.1.1.1 declares an athlete ineligible upon testing positive for a banned substance listed in Bylaw 31.2.3.1, while the governing ineligibility standards are set forth in § 18.4.1.5. *See* NCAA MANUEL, §§ 14.1.1.1, 18.4.1.5. Section 14.1.4.1 requires each participating student-athlete to sign a consent form to be tested for drug use during the academic year, and the failure to sign such form will deem an athlete ineligible for competition. *See* NCAA MANUAL, § 14.1.4.1.

58. *See* NCAA MANUAL, § 14.1.4.1 (stating consent is required or athlete is considered ineligible); *see also* NCAA DRUG-TESTING PROGRAM PROTOCOL 2000-2001, § 3.1, *at* http://www.ncaa.org/sports_sciences/drugtesting/program_protocol.html#causes (last visited Oct. 22, 2001) (setting forth necessary provisions that apply to current year). When the student-athlete signs the consent form, the athlete acknowledges an understanding of the drug testing program and a willingness to participate during the season, as well as before and after a season's completion. *See* NCAA DRUG TESTING PROTOCOL 2000-2001, § 3.1.

student-athletes have notice of all possible procedures and outcomes.[59]

4. *Interscholastic Athletics*

The Supreme Court established drug testing of public high school students as permissible, especially the testing of student-athletes.[60] In response to the Constitutional claims that a drug policy in the high school environment violates the Fourth and Fourteenth Amendments, the Court upheld the testing procedures after evaluating the nature of the privacy interest, the character of the intrusion and the government's justification for implementing such a policy.[61] High school student-athletes have a reduced expectation of privacy in the academic environment due to the nature of scholastic athletics.[62]

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59. *See Hill*, 865 P.2d at 658-59. A college athlete cannot assert a reasonable expectation of privacy under the NCAA's drug testing program because the program does not perpetuate such an expectation. *See id.* The NCAA program provides notice at the outset of athletic participation of possible drug testing and an opportunity to consent to the testing; therefore, full disclosure is made to a student-athlete concerning preseason, season and postseason testings. *See id.* at 659.

60. *See* Vernonia Sch. Dist. v. Acton, 515 U.S. 646, 664-65 (1995) (holding school's drug testing policy as reasonable). The Vernonia School District enacted a drug policy in response to an increased attraction by young students to the drug culture, especially because those within the athletic community appeared to lead the drug culture. *See id.* at 648-49. Upon the contemplation of the drug-testing program, the school district sought input from the parents, who unanimously agreed to the necessity of such testing. *See id.* at 650. Therefore, the school district enacted a policy, applicable to all participants of interscholastic athletics, "to prevent student-athletes from using drugs, to protect their health and safety, and to provide drug users with assistance programs." *Id.*

61. *See id.* at 654-64. The Court acknowledged that a warrant was not required because the "special needs" exception is met in the public school context. *See id.* at 653. The Court felt that teachers and administrators' ability to maintain order within the school should not be impeded with a warrant requirement. *See id.* (citing New Jersey v. T.L.O., 469 U.S. 325, 340 (1985) because holding established "individualized suspicion" as adequate did not mean such requirement exists).

Because the schools deem students to be their responsibility, a legitimate interest of their well-being exists. *See id.* at 654-56. Furthermore, the expectation of privacy is diminished because students are routinely subjected to examinations for their well-being, as well as those in the surrounding environment. *See id.* The Court felt the intrusion did not amount to a high level because the testing circumstances were similar to being present in a public restroom. *See id.* at 658 (noting testing males required observation from behind, while female testing was performed in enclosed stall). The Court defined the required interest not as a "compelling state interest," but more appropriately, as an "interest that appears *important enough* to justify the particular search at hand, in light of other factors to show the search to be relatively intrusive upon a genuine expectation of privacy." *Id.* at 661.

62. *See id.* at 657. High school athletics require participants to "suit up" before and following practices and events in locker rooms that do not afford privacy. *See id.* For example, individual showers or dressing rooms do not exist. *See*

B. Existing Controversies

1. *Performance Technology, Generally*

Today, athletes can enhance performance legally by using new clothing, equipment and training systems; however, performance enhancement with drug use is strictly forbidden.[63] A debate exists concerning whether current technology falls under the traditional category of improving the athletic playing field or if these innovations eliminate athletic talent as a prerequisite for competition and provide an unfair advantage to wealthier athletes and nations.[64] The current controversy centers on sports equipment manufacturers' desire to introduce "profitable, technologically advanced merchandise" and athletic governing bodies' desire to protect the integrity of their sports.[65] An agreement must be reached to establish uniform rules of play among each sport regarding technological advancements.[66] The various athletic associations and

id. Furthermore, participants in high school athletics volunteer themselves for a higher degree of regulation because of insurance requirements, minimum grade standards and rules of conduct. *See id.*

63. *See* Clark & Milliken, *supra* note 9 (introducing growing debate on using technological innovations). Examples of acceptable athletic equipment used include "sharkskin" long-john suits for swimmers, clothing for sprint runners that includes a hooded suit and nitrogen tents that simulate high-altitude training for endurance athletes. *See id.* For a complete discussion of the prohibition of drug use by athletes, see *supra* notes 21-62 and accompanying text.

64. *See generally* Clark & Milliken, *supra* note 9 (raising questions of whether technologies truly benefit athletes in their performance); Phillips, *supra* note 10 (noting substitution of technology for strength in sport); Submission from Professor Brent S. Rushall, Ph.D., R.Psy., to Professor Richard McLaren, QC, The Court of Arbitration for Sport (Apr. 2, 2000), *available at* http://www-rohan.sdsu.edu/dept/coachsci/swimming/bodysuit/CASsub.html (discussing debate as preservation of pure sport against interests in profit-making). *But see* Jeff Hollobaugh, *Keeping Track of Technology*, *at* http://espn.go.com/moresports/columns/hollobaugh_jeff/438334.html (Mar. 21, 2000) (discussing continued advances in track and field that are making measurement more accurate, which is viewed positively).

65. *See* Daniel E. Lazaroff, *Sports Equipment Standardization: An Antitrust Analysis*, 34 GA. L. REV. 137, 137 (1999). It is important to note that inhibiting technological advancements in sports could lead to a discouragement of manufacturing new products and equipment, however, not restricting the advancements in any manner could result in an alteration of existing sports, as well as pose a risk to participants. *See id.* at 140. For example, equipment modifications may subject participants to increased risks of injury because proper testing has not occurred and athletes do not have experience in using such equipment. *See id.* at 193.

66. *See id.* at 151-52 (citing NCAA v. Bd. of Regents, 468 U.S. 85, 101 (1984) because without rules to define competition or sports, leagues could prove ineffective). The author discusses that organized sports require self-policing in order to establish fair competition and safety of participants. *See id.* Examples of rules include "nature of the playing surface, number of players, and types of permissible equipment." *Id.*

regulatory bodies must seriously consider the impact of high-tech athletic equipment on their respective sports.[67]

When regulatory athletic associations have sought to restrict the use of technologically advanced equipment, manufacturers have sought relief from the judicial system pursuant to antitrust laws.[68] Although this comment focuses on current controversial technologies arising in sports and recommends possible solutions, it is important to briefly address the courts' involvement in this area to understand the need for uniform rules.[69] The courts have held that the proper focus in determining actions brought by equipment manufacturers, in response to restricting the use of their products, is to apply a "rule of reason" analysis.[70] Athletic associations and agencies argue that they should be permitted to ensure fair compe-

67. *See* Michelle A. Cusimano, *National Collegiate Athletic Association Strikes Out Aluminum Bat Manufacturer*, 43 N.Y.L. SCH. L. REV. 1061, 1063 (2000) (noting athletic associations must consider how improved athletic equipment affects integrity and safety of respective sports).

68. *See, e.g.*, Gunter Harz Sports, Inc. v. United States Tennis Ass'n, 665 F.2d 222, 223 (8th Cir. 1981) (discussing district court's proper analysis using rule of reason to determine valid regulation regarding use of racquet); *see also* Weight-Rite Golf Corp. v. United States Golf Ass'n, No. 90-308 Civ-T-10(B), 1990 U.S. Dist. LEXIS 15461, at *1 (M.D. Fla. 1990) (noting plaintiffs' argument that determination by governing body does not conform to regulatory rules set forth by agency).

69. *See Gunter Harz*, 665 F.2d at 223 (stating court's proper jurisdiction when concerns of antitrust regulation arise). The United States Tennis Association ("USTA") imposed a temporary ban on the use of a double string tennis racquet because the racquet's use "may result in a 'double hit.'" Gunter Harz Sports, Inc. v. United States Tennis Ass'n, 511 F. Supp. 1103, 1109 (D.C. Neb. 1981). Subsequently, the USTA adopted a new rule that defined a tennis racquet and replaced the temporary ban. *See id.* at 1107. Plaintiff Gunter Harz, a corporation engaged in manufacturing and distributing tennis racquets with double strings, brought an antitrust action against the USTA for injunctive relief to prevent the ban's effectiveness. *See id.* The USTA argued that the court did not have jurisdiction to determine the issue because no evidence of "extraordinary anticompetitive animus" existed. *Gunter Harz*, 665 F.2d at 223.

70. *See* Lazaroff, *supra* note 65, at 170 (reciting inquiry established in *Gunter Harz*). The relevant inquiry is:

> (1) whether the collective action is intended to accomplish an end consistent with the policy justifying self-regulation; (2) whether the action is reasonably related to that goal; (3) whether such action is no more extensive than necessary; and (4) whether the association provides procedural safeguards which assure that the restraint is not arbitrary and which furnish a basis for judicial review.

Gunter Harz, 511 F. Supp. at 1116.

In *Gunter Harz*, the district court found that the USTA is a private, non-profit, regulating body that preserves the integrity of the tennis game and conducts its competitions. *See Gunter Harz*, 665 F.2d at 223. The regulations promulgated with respect to the racquets were rationally related and did not extend beyond that necessary. *See id.* Furthermore, adequate procedural safeguards exist because parties may seek approval for certain racquets if they can prove that the game of tennis is not fundamentally altered. *See id.*

tition and maintain the integrity of their respective sports by regulating equipment.[71] If equipment becomes "so sophisticated that one cannot adequately distinguish the relative skill levels of the participants in their performances, the very nature of the sport is irrevocably altered."[72] Although sporting authorities have an interest in preserving the integrity of athletics, not all technological advancements have negatively impacted sports.[73] Furthermore, it is difficult to discern how to appropriately establish and implement rules governing the use of technology.[74]

2. *Examples of Current Technological Innovations*

Currently, various individuals have attacked the use of technological advancements in some sporting areas due to a perceived impact on the competitive playing field.[75] Numerous controversial examples exist regarding the link between technology and performance enhancement.[76] This section presents a number of technological advances that exist but remain controversial because some believe that their use enhances athletic performance.[77] To subdue such controversy, governing athletic bodies should enact regulations that restrict the use of such enhancing innovations, just as they have done in banning drug use that enhances an athlete's performance.[78]

A controversial technological innovation presenting controversy in competitive swimming and triathlons, for example, is a high-tech body suit.[79] The manufacturers of this body suit advertise

71. *See* Lazaroff, *supra* note 65, at 162 (discussing justifications for standardizing equipment in athletics).

72. *Id.* (emphasizing pro-competitive justifications for standardizing equipment in athletics).

73. *See id.* at 163 (discussing advancements that produce desirable results, such as use of helmets in hockey, football and baseball); *see also* Bob Harig, *Souchak Regrets Missing Out on Technology*, ESPN GOLF ONLINE, *at* http://espn.go.com/golfonline/tours/columns/harig_bob/1066099.html (Feb. 6, 2001) (mentioning amazing improvements in golf balls and clubs that have revolutionized golf games); Hollobaugh, *supra* note 64 (noting technology has "revolutionized the way track and field measures up" because measurement is more accurate).

74. *See* Lazaroff, *supra* note 65, at 164 (noting questionable area as to who can draw line and how much regulation is necessary).

75. For examples of such technological advancements, see *supra* notes 63-65.

76. *See* Clark & Milliken, *supra* note 9 (noting rapid development and continual advancement occurring with equipment).

77. *See infra* notes 79-113 and accompanying text.

78. For a discussion on drug use restrictions and bans, see *supra* notes 29-62 and accompanying text.

79. *See* Andrew Hamilton, *Australian Triathletes Divided Over New Swimsuits*, AAP NEWSFEED, Apr. 27, 2000, at Domestic Sport (noting dispute existing when company announced that sponsored athletes would perform in new racing cos-

a three percent enhanced performance upon wear.[80] Athletes have been divided on whether the new suits should be permitted in competition.[81] Some athletes argue that the suits should not be permitted during competition because of the possibility of enhanced performance, while others argue that the suits have no impact on competition results and should be permitted.[82] In a submission to the Court of Arbitration for Sport,[83] Professor Brent S. Rushall argued for a complete ban of the bodysuit in swimming competitions.[84] Professor Rushall believes that the time has come to "preserve[ ] the activity as a pure sport, or let outside commercial interests dictate its development largely for profit motive."[85] Although some technological advancements are permissible in the sport of swimming, performance-enhancing equipment is not a traditional, permissible advancement for competition.[86] According to Professor Rushall, "[s]wimming races must be fair and decided on athletes' merits. It should never be said that one athlete was better because of the costume that was worn."[87] The honor and

tumes). Despite the controversial use of the suits, athletes were permitted to wear them in the Olympic Games held in Sydney, Australia in 2000. *See* Associated Press, *USA Swimming: No 'Suits' For You* (June 22, 2000), *at* http://espn.go.com/moresports/news/2000/0622/598913.html (noting bodysuits were approved for use by swimming's international governing body for Olympic Games).

Marine biologists designed the controversial swimsuit, marketed by the manufacturer Speedo, in order to mimic sharkskin in water. *See id.* Another manufacturer, Adidas, claims the suit improves performance by compressing a swimmer's muscles. *See id.*

80. *See* Hamilton, *supra* note 79.

81. *See id.*

82. *See id.* Australian athlete, Greg Bennett, believes that the suits should not be allowed in competition because the overall race outcome is affected; therefore, triathletes should only perform as they have always done: "in togs." *Id.* On the other hand, national champion, Miles Stewart, argued that the suits make no difference on performance as evidenced by the first three finishers, who did not wear them, at the previous year's world championships. *See id.*

83. *See* Dimitrios Panagiotopoulos, *Court of Arbitration For Sports,* 6 VILL. SPORTS & ENT. L.J. 49, 53 n.11 (1999) (explaining Court of Arbitration for Sport's purpose and establishment). The Court of Arbitration for Sport ("CAS") allows for settlement of disputes arising in the sporting field. *See id.* The CAS permits arbitration in a fast and inexpensive procedure for affairs related to sports. *See id.*

84. *See* Rushall, *supra* note 64 (stating best alternative would be banning suits altogether because races would be determined solely on athletic ability, not equipment).

85. *Id.* § 1 (noting possibility of "irreparably changed" sport).

86. *See id.* § 3 (citing FINA Rule SW 10.7 as "[n]o swimmer shall be permitted to use or wear any device that may aid his speed, buoyancy or endurance during a competition (such as webbed gloves, flippers, fins, etc.). Goggles may be worn."). Examples of permissible advancements include lane lines, swimming rules, improved pool constructions and goggles because all performers can enjoy these improvements equally. *See id.*

87. *Id.* § 6.

tradition of competitive swimming has always relied on one's athletic ability against the ability of competition.[88] The athletes have mixed reactions to the controversy because the focus should be on the competitive swimming field, not the technology.[89]

Another controversial technological advancement is the high-powered tennis racquet that purports to provide greater power to competitors.[90] Many argue that it may not be possible to attain more power in the average tennis game, which leads to the essential question of "[a]re power racquets good for the game?"[91] Rather than players focusing on physical strength, conditioning and proper swings, players must focus on matching an opponent's equipment.[92] An even more recent advancement is the piezoelectric power system, the first electronic tennis racquet.[93] This racquet provides "the ultimate combination of power, maneuverability, and comfort."[94] The existence of this emerging technology demonstrates manufacturers' ability to influence the athletic equipment market.[95]

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88. *See id.* § 3 (stating manufacturers have violated sport's ethics for their own greed and profit). It is further stated that an analogy to performance-enhancing drugs can be drawn to such equipment because both alter athletes' abilities to perform. *See id.*

89. *See* Associated Press, *Swimmers Can Wear Full-Length Suits at Trials, at* http://espn.go.com/oly/news/2000/0718/640144.html (July 18, 2000) (quoting Olympic swimmer Jenny Thompson because athletes need to focus on their swimming and not suits). American swimmer Tom Malchow stated that he was not sure whether the suit actually affected performance because "[s]wimming is very much a mental sport, so you do what you have to do to feel better." *USA Swimming: No 'Suits' for You, supra* note 79.

90. *See* Phillips, *supra* note 10 (noting manufacturers emphasize need for more power in tennis game). With the latest technologies, including the use of titanium and hyper carbon, manufacturers have created racquets with more "horsepower in their frames." *Id.*

91. *Id.* A fear exists that society is losing sight of the meaning of sport as the focus shifts from the actual physical strength of a participant. *See id.*

92. *See id.* (suggesting "time to put good old-fashioned oomph back into the game").

93. *See Continuum Control Corporation and Head Sport AG Introduce World's First Electronic Tennis Racquet,* Aug. 25, 2000, *at* BUSINESS WIRE (noting that corporation's patent is pending and racquet introduced at international trade show).

The racquet uses natural energy from within to improve performance. *See id.* When the ball makes contact with the racquet, piezoelectric composites convert the ball vibrations into electrical energy, which are then processed by the racquet's electronics to send the energy back to the composites for optimal racquet response. *See id.*

94. *Id.* The corporation's president also noted that the racquet "is the first example of a self-powered active control system in a commercial product, where the electricity needed to power the device is generated entirely by the user." *Id.*

95. *See id.* (emphasizing manufacturers' influence that more power is needed in tennis game).

A third example of a new and controversial athletic technology is the nitrogen tent, which endurance athletes use for training.[96] Although nothing prohibits the use of the tents, the tents increase the levels of red blood cells and naturally occurring erythropoieten.[97] Erythropoieten injections are illegal due to the performance-enhancing effect.[98] Another criticism of athletes using these tents is the high level of expense, which would benefit wealthier athletes and nations.[99] Furthermore, the tents' use is believed to "push[ ] training and preparation too far."[100] In response to these assertions, athletes claim no harm exists because the tents merely simulate altitude, which is an accepted and permissible way to train for endurance events.[101]

An example of a technological impact in baseball is the use of an aluminum bat in college play.[102] Although Major League Baseball has never endorsed the use of an aluminum bat, the NCAA has permitted its use until recently.[103] As manufacturers of aluminum bats became more competitive with one another, the bats became

96. *See* Clark & Milliken, *supra* note 9 (noting tents ability to have athletes run farther and faster because athletes' bodies carry more oxygen); *see also* Associated Press, *Clausen Uses Tent Technology, at* http://espn.go.com/oly/summer00/trackfield/s/2000/0825/703467.html (Sept. 19, 2000) (noting belief among athletes that altitude training allows bodies to carry more oxygen); Mackay, *supra* note 21 (stating nothing currently prohibits tents' use).

The tents roll up into dimensions of two and one half feet by six inches, but when assembled, the tents fit over a bed and resemble a camping tent with plexiglass windows. *See Clausen Uses Tent Technology.* Furthermore, a seventy pound generator is required for use. *See id.*

97. *See* Mackay, *supra* note 21 (noting tents' increased popularity in use among athletes due to positive effects).

98. *See id.* (observing top athletes abuse naturally occurring substance through injections in order to increase performance).

99. *See* Clark & Milliken, *supra* note 9 (asserting price for one tent is $6000, thus, less wealthier nations and athletes could not afford them).

100. Mackay, *supra* note 21 (stating tents are in "gray zone" because idea is new and has not been adequately tested). Some testing shows that athletes using the tents have been faster and stronger. *See id.* For instance, the improvement has been as much as three seconds over a 1500 meter race. *See id.*

101. *See id.* (quoting British cross country champion, Spencer Duval, "it's like saying living at altitude is illegal"). For years, athletes have used altitude training as a legal method of enhancing performance. *See* Dave Edwards, *Returning Runner Scales Heights in Home Comfort: Duval in Bid to Hit Form at Olympics,* THE SENTINEL, Jan. 15, 2000, at Sport 14. At altitude, the blood is encouraged to produce more red blood cells, which increases the blood's carrying capacity of oxygen, and the athlete benefits upon returning to sea level. *See id.*

102. *See* Cusimano, *supra* note 67, at 1070 (discussing evolution of aluminum bat use).

103. *See id.* (reciting NCAA's use of aluminum bat since 1974).

lighter and more powerful.[104] These bats allow players to swing faster and have more precise contact with the ball; therefore, players reach greater bat speeds, and "bat speed . . . determines power."[105] The use of these bats has impacted the collegiate baseball game.[106] In response to this impact, the NCAA approved rule changes as to the specifications and performance standards of baseball bats.[107] With the enactment of the new rules, the NCAA hopes to restrict the performance of the bats and "take some of the firepower out of the home run derbies of recent years."[108] In addition, the new standards should provide a "better competitive balance between offense and defense and will make the game safer for all participants."[109] Aluminum bat manufacturers challenged the rules because of the potential impact on the market.[110] In response to these antitrust suits, courts have cited *NCAA v. Board of Regents of the University of Oklahoma* because "[i]t is reasonable to assume that most of the regulatory controls of the NCAA are justifiable means of fostering competition among amateur athletic teams and therefore pro-competitive because they enhance public interest in inter-

104. *See id.* (noting manufacturers used more durable metal that stretched more thinly).

105. *Id.*

106. *See id.* at 1071 (noting revolution of college game goes beyond increased batting averages). Aluminum bats have greatly affected the college baseball game. *See id.* Aluminum bats increase a hitter's ability to hit fastballs. *See id.* These fastballs require players to position themselves deeper in the field, and pitchers must throw more curve balls. *See id.* These changes have resulted in increased injuries because balls travel faster due to the performance feature of the aluminum bats. *See id.*

107. *See* Cusimano, *supra* note 67, at 1061. The new rules consist of the following three changes: (1) a bat must produce a ball speed under ninety three miles per hour; (2) a bat's diameter is limited to a maximum of 2 5/8 inches; and (3) a bat cannot weigh "numerically more than three units less than the length of the bat." *Id.* at 1072.

108. *Id.* at 1061 (quoting Lon Eubanks, *NCAA Mutes the Bats; College Baseball: Changes in Specifications Will Limit Home Run Potential Beginning with the 2000 Season,* L.A. TIMES, Aug. 13, 1998, at C1).

109. *Id.* at 1071 (stating increased injuries because college baseball game has altered sport). Because college pitchers must throw more curve balls to counteract the effects of the aluminum bat, they experience shoulder and arm injuries earlier in their careers. *See id.*

110. *See id.* at 1061. Over the years, the NCAA has been sued on allegations of violating federal antitrust law. *See id.* at 1062. *See also* NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 88 (1984) (challenging NCAA's control over football game telecasts); Law v. NCAA, 134 F.3d 1010, 1012 (10th Cir. 1998) (challenging NCAA rule limiting coaches' compensation). Although the NCAA is nonprofit and self-regulating, the NCAA will not be shielded from antitrust liability. *See* Cusimano, *supra* note 67, at 1062.

collegiate athletics."[111] The non-economic justifications relied on by the NCAA to enact the standards included the need for a better competitive balance and increased safety.[112] In order to reduce the equipment's effect on the game of baseball, the NCAA rightfully enacted standards because college games had become "home run derbies."[113]

Although the above-mentioned examples do not cover all athletic fields, they demonstrate technology's ability to affect a variety of athletic arenas.[114]

III. ANALYSIS OF DEBATE

A. Permissive Use of Innovations

It is a long-standing tradition to allow technology to heighten the level of athletic competition.[115] Even though the developing technological innovations concern new clothing, equipment and training systems, it is argued that such advancements fall under the traditional evolution of sports.[116]

The use of innovations receives support because changes are inevitable as science and technology develop and propel athletic competition to new levels.[117] For instance, the timing systems used in track and field events allow athletes to see immediate results in their events, as well as produce better training aids.[118] In golf, ball improvements have led to lower and record scores.[119] For example,

111. Cusimano, *supra* note 67, at 1077 (quoting *Bd. of Regents,* 468 U.S. at 117).

112. *See id.* at 1078-80 (discussing justification for regulations as preserving integrity of game and although baseball has lowest injury rate of all surveyed sports, injury rate is increasing).

113. *Id.* at 1079 (citing Eubanks, *supra* note 108, at C1).

114. For a further discussion of the rising debate focused on technology and athletics, see *supra* notes 63-67 and accompanying text.

115. *See generally* Clark & Milliken, *supra* note 9 (discussing questions regarding multitude of recent innovations).

116. *See id.* For instance, the creation and use of fiberglass poles shattered previous records in the sport of pole vaulting. *See id.*

117. *Cf.* Lazaroff, *supra* note 65, at 163 (asserting that safety has increased and games have become more enjoyable with new advancements); *see also, e.g.,* Hollobaugh, *supra* note 64 (demonstrating importance of quantification in track and field, therefore, improvements in measurement have propelled sport to new levels).

118. *See* Hollobaugh, *supra* note 64. For instance, automatic timing has a direct benefit to sprint runners because they can "readily see whether they are making progress," and since the events are so short, hand timing is not sufficiently accurate. *See id.* Furthermore, training has improved because stopwatches can now download workout results. *See id.* These results are transferred to computer programs, which design a more individualized workout for athletes. *See id.*

119. *See* Harig, *supra* note 73 (noting today's golf balls are state of art).

in earlier days, a steel ring was needed to determine if a ball in fact was round and eligible for tournament play; today, however, steel rings are no longer needed for such a determination because golf balls are designed under more precise measures.[120] Additionally, improved techniques in the swimming arena have been accepted so long as all participants have equal access to the advancements.[121] Permissive advancements in swimming have fallen under two categories: keeping the "*playing field* level" and goggles.[122]

Promoting safety is another reason for allowing technology to develop within athletics.[123] For example, improved helmets increase safety for players in baseball, football and hockey.[124] The safety of athletes has always been a valid justification for improvements in sports.[125] In addition, technological improvements enhance the competitive field, thereby pushing athletes to new levels.[126]

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120. *See id.* Golfer Mike Souchak played the sport when such technology did not exist, and he expresses the desire to have played with the current technology. *See id.* Souchak discussed that in using the steel ring to determine a ball's tournament standards usually equated to two dozen out of six dozen balls being deemed unacceptable for play. *See id.*

121. *See* Rushall, *supra* note 64, § 3 (discussing technological advancements as permissive but not performance-enhancing equipment in competition). According to Professor Rushall, technological advancements are allowed because all performers can benefit equally from their use, and the sport as a whole benefits. *See id.* However, performance-enhancing equipment alters the essence of the sport by providing advantages to some competitors and not others, and the sport as a whole receives no benefit. *See id.*

122. *See id.* Although the first type of advancements have drastically improved times, all competitors are able to enjoy them, which include new developments in lane lines, swimming rules and improved pool constructions. *See id.* Additionally, the use of goggles in competition is not considered to be performance enhancing because their initial introduction was for the alleviation of eye discomfort and maladies. *See id.*

123. *See* Lazaroff, *supra* note 65, at 163 (discussing positive effects of technological improvements).

124. *See id.* Improvements have also contributed to a higher enjoyment for participants. *See id.* Further developments in golf have introduced the use of titanium clubs, which increase distance and accuracy. *See id.* at 164 n.74. In addition, performance in baseball has reached new levels because of newly designed gloves and balls. *See id.*

125. *Cf. International Summit: Drugs in Sport Policy Commitment, supra* note 50 (defining purpose of organization); *NCAA, at* http://www.ncaa.org (explaining NCAA's role in intercollegiate athletics).

126. *See* Harig, *supra* note 73. Individuals who push players to compete at higher levels improve and enhance the game. *See id.* For example, Tiger Woods "has set the bar so high, everybody is trying to keep up with him." *Id.* (quoting Mike Souchak's response that higher number of talented players exist).

B. Restricting Use of Innovations

With the various technologies emerging at a rapid pace, concerns arise regarding the unbridled use of the innovations.[127] Opponents to unrestricted use of technological innovations rely primarily on fairness concepts.[128] Courts have addressed athletic equipment regulation only when manufacturers have brought antitrust violations in response to an athletic governing body's enactment of regulations.[129] When courts have addressed standard equipment regulations, they have determined that the interests of the athletic agencies are likely to prevail unless the plaintiff can show a substantial adverse effect on competition.[130] Using the previously cited examples of technology, opponents to full utilization of sports technology assert arguments of fairness, alteration of sports, preservation of ethics and a loss of focus on competition.[131]

Fairness to the participants in all sports is frequently cited as a reason to restrict the use of technological innovations.[132] Fairness concerns do not pertain solely to established rules but also to tech-

127. *See* Clark & Milliken, *supra* note 9 (contending scientific and legal bases do not exist to ban innovations, however, controversy remains).

128. *See generally* Lazaroff, *supra* note 65, at 140 (claiming technology alters existing sports and presents "unacceptable safety risks").

129. *See id.* at 141 (focusing on regulatory efforts by agencies in golf and baseball that affect both players and manufacturers); *see also* Gunter Harz, Inc. v. United States Tennis Ass'n, 665 F.2d 222, 223 (8th Cir. 1981) (supporting district court's finding that organization has legitimate function to ensure character of game); Weight-Rite Golf Corp. v. United States Golf Ass'n, No. 90-308 Civ-T-10(B), 1990 U.S. Dist. LEXIS 15461, at *1 (D.C. Fla. 1990) (arguing rule of reason analysis will prevail in claim).

In the cases concerning antitrust regulations, the courts will determine whether or not the restraint promotes or hinders competition among manufacturers. *See, e.g., Weight-Rite,* 1990 U.S. Dist. LEXIS 15461, at *8. In *Weight-Rite,* the USGA determined that the use of plaintiff's golf shoe violated an established rule because a "player shall not use any artificial device or unusual equipment . . . which might assist him in gripping the club, in making a stroke or in his play." *Id.* at *4 (citing Rule 14-3 of Rules of Golf, as published by USGA). It was determined that the shoe assisted "golfers in distributing their weight so as to better resist the tendency to push away from the ball during the swing." *Id.* The *Weight-Rite* court determined that the established rules served to "preserve the traditions of the game;" therefore, plaintiffs failed to meet the burden in the antitrust claim because adequate notice was provided by the regulating agency. *Id.* at *3, *14.

130. *See* Cusimano, *supra* note 67, at 1073 (discussing burden of proof rests initially on plaintiff but will shift to defendant upon showing of substantial adverse effect, at which time, defendant must show pro-competitive justifications).

131. For a further discussion of these concepts, see *supra* notes 63-74.

132. *See* Lazaroff, *supra* note 65, at 188 (alleging reasonable parameters needed on competitive field in order to ensure fairness).

nology's availability to participants.[133] For example, oxygen tents used to simulate altitude training by endurance athletes are expensive.[134] In addition, not all advancements are suitable for each participant in a given sport.[135]

Another argument supporting a restricted use of technology includes the possibility of a complete alteration of sports.[136] Potentially, sports equipment could become "so sophisticated that one cannot adequately distinguish the relative skill levels of the participants in their performances."[137] The athlete with the best equipment, rather than the individual with the most ability, talent and training, may be more successful in competition.[138]

With constant debates on the technological advancements in sports, a fear exists that the focus of athletics will be detracted from ideas of competitive success and replaced by a focus on maintaining technology in the competitive realm.[139] For example, with the increasing emphasis on power in tennis racquets, it is possible to lose sight of the sport's traditions because the message presented implies that "racquet technology is a substitute for physical

133. *See* Rushall, *supra* note 64, § 3 (contending that body suits are not available to all participants); *see also* Clark & Milliken, *supra* note 9 (questioning technology's easier accessibility to wealthier nations).

134. *See* Clark & Milliken, *supra* note 9 (claiming high price tag of $6000 makes tents inaccessible for many).

135. *See* Rushall, *supra* note 64, § 3. The body suits used by swimmers are not a universally tailored product that fit each and every competitor. *See id.* In fact, the suits must be specially tailored for each individual, which could result in a "'*special suit*' clad swimmer winning a gold medal" and defeating "pure" competition. *Id.* Furthermore, a belief exists that the body suits favor "muscle-bound swimmers over skinnier athletes." Associated Press, *Decision Met with Mixed Reactions, at* http://espn.go.com/oly/news/2000/0719/641420.html (July 19, 2000) (quoting sprinter Bill Pilczuk). The belief states that the suit will cause the swimmer to float, increasing buoyancy and decreasing the effort an athlete must exert to pull through the water, thus, benefiting those with higher muscle density. *See id.*

136. *See* Lazaroff, *supra* note 65, at 162 (justifying equipment standards because of need to prevent sport's fundamental alteration that could be attributed to technological advancements); *cf.* Cusimano, *supra* note 67, at 1071 (asserting NCAA's use of aluminum bat has revolutionized college baseball, leading to debate on integrity of sport and players' safety).

137. Lazaroff, *supra* note 65, at 162. The author alleges that golf club technology could become so advanced that distance and accuracy are determined by golf club characteristics, not a player's swing; therefore, the entire competitiveness of the sport no longer exists. *See id.*

138. *See* Rushall, *supra* note 64, § 1 (purporting ability solely should determine races but now "gold medals could go to the swimmer with the best performance-enhancing suit").

139. *See generally* Lazaroff, *supra* note 65, at 140 (setting forth example that improved golf equipment has allowed quicker progression of game but could potentially detract from emphasis on players' individual skills).

strength."[140] Also, the controversial, competitive swimsuits have stirred the same arguments of an improper focus on an unlimited use of technology.[141] Coaches and athletes alike have reiterated the point that the primary attention of a sport needs to be on the competition and the athletes, not the equipment designed for competition.[142]

A final argument for technology use restrictions in sports is to preserve the ethics and integrity of athletics as a whole.[143] The relationship between ethics and sports can be described as negative, neutral or positive.[144] An ideal ethical thought in the sports context is the concept of sportsmanship.[145] Pursuant to the idea of integrity, governing athletic bodies have deemed regulation necessary for performance enhancement, albeit in the category of substance use; therefore, it should reasonably follow that the integrity of sport must be preserved by restricting technological innovations.[146]

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140. Phillips, *supra* note 10 (posing hypothetical that no motivation exists to improve actual skills because participants can wait until manufacturers develop advanced frame).

141. *See* Rushall, *supra* note 64, § 3 (drawing parallel between performance-enhancing drugs and performance-enhancing equipment). According to Professor Rushall, manufacturers have intruded on "the honorable and traditional concept of competitive swimming as being human ability against human ability." *Id.* Furthermore, greed and profit motivate equipment manufacturers to promote equipment that enhances an athlete's performance; therefore, violating the ethics of swimming as a sport. *See id.*

142. *See Swimmers Can Wear Full-Length Suits at Trials, supra* note 89 (referring to Olympic swimmer Jenny Thompson's comment that swimmers should not focus on suits but swimming); *see also USA Swimming: 'No Suits' For You, supra* note 79 (quoting Dick Jochums, top distance coach, that wrong message is sent to young athletes in emphasizing technology).

143. *See, e.g.,* Cusimano, *supra* note 67, at 1071 (explaining compromised integrity of sport when allowing revolutionary products to overcome competition). Competitions become unfair and meaningless when technological advancements win races, not the best athlete. *See* Rushall, *supra* note 64, § 3.

144. *Cf.* Anderson, *supra* note 4, at 386. A negative relationship exists when athletes believe success can be obtained only through cheating or immoral actions. *See id.* A neutral relationship is present when sports have no impact on the moral arena. *See id.* The relationship is positive when sports aid an individual's moral development. *See id.*

145. *See id.* at 387. Sportsmanship fosters adherence to rules, individual effort and an appreciation for all participants' efforts. *See id.* Sportsmanship is less concerned with the end result of competition. *See id.*

146. *See* Ludd, *supra* note 12, at 617 (naming typical justifications for drug testing as athletes' health, maintaining sports' integrity and protecting public's financial interest); *see also* Cusimano, *supra* note 67, at 1063 (explaining non-profit, self-regulating athletic associations must consider state of art athletic equipment affecting their respective sports).

IV. SUGGESTIONS FOR RESOLUTION

A. Establish Research Committees

A possible solution is to appoint committees to conduct independent research for determining the actual effects of the innovative equipment on the different athletic arenas.[147] For instance, in swimming, research protocol can be replicated to conduct studies that determine whether advances enhance performance.[148] When athletic organizations face claims from equipment manufacturers regarding bans or regulations, the organizations themselves must conduct studies to establish the effects.[149] Typically when faced with the possibility of performance enhancement through unnatural means, the athletic organizations have consistently appointed a committee to conduct research, establish findings and set forth standards in the best interests of the sports.[150] It is only practical for each sport's athletic association to appoint a committee to oversee technological advancements, resulting in an establishment of uniform methods and conclusions for each sport concerning relevant innovations.[151] The increasing number of innovations has proven to be a troubling issue because the latest technology surpasses the technology as recent as 1996.[152] The debate over tech-

147. *See generally* Rushall, *supra* note 64, § 3 (arguing technology research should not be left to manufacturers).

148. *See id.* Research could begin by replicating the studies conducted to determine the effect of shaving in swimming. *See id.* According to Professor Rushall, laboratories could perform the studies with the right expertise, protocol, ethical objectivity and equipment, as performed by David Costill at Ball State University. *See id.* Initial questions to address include possible flotation effects and physiological advantages. *See id.*

149. *See* Gunter Harz Sports, Inc. v. United States Tennis Ass'n, 511 F. Supp. 1103, 1109 (D.C. Neb. 1981). The USTA serves to provide a fair development of the sport by establishing standards and rules of play. *See id.* at 1107. The governing committee's purpose in issuing a ban on double stringed racquets was to enable research to be collected, not to inhibit technological advancements, because "it [was] suggested that the use of double stringing may result in a 'double hit.'" *Id.* at 1109. Following research, the governing association set forth a rule that established standard conditions for tennis racquets in order to "encourage progress but . . . in the best interests of the game." *Id.* at 1110.

150. *See* Hill v. NCAA, 865 P.2d 633, 638 (Cal. 1994) (discussing research by NCAA that led to adoption of drug policy); *see also International Summit: Drugs in Sport Policy Commitment, supra* note 50 (identifying establishment of drug testing policies following in depth research of substances and methods). For a complete discussion of the implemented policies of these governing organizations, see *supra* notes 50, 55 and accompanying text.

151. *Cf. International Summit: Drugs in Sport Policy Commitment, supra* note 50 (providing time line of events that led to adoption of drug policy because of concern for sports and safety of athletes).

152. *See* Clark & Milliken, *supra* note 9 (demonstrating no legal or scientific bases to ban use of certain technological advancements).

nology continues to raise questions that require answers.[153] Therefore, it is only logical for a specific committee with an understanding of the sport to remain afoot of the developing technologies.[154]

B. Establish Uniform Equipment Standards

Although the majority of athletic organizations adopt standards to define and regulate equipment, it is essential that the standards are specific, not subject to various interpretations, and apply equally to all competitors.[155] An example of a standardization technique that has removed the enhancing effects of a particular competitive suit was established for ski jumping events.[156] Since the Winter Olympic Games in 1980, all Nordic events involving ski jumping require suits to be tested by a machine.[157] This machine measures the air that passes through the suit's fabric in order to ascertain that the permeability exceeds a minimum limit.[158]

The courts have allowed private sport organizations to enact equipment standards for athletics' general welfare.[159] For example, in order to control advanced products, the international cycling federation has set forth an applicable standard for all bicycle frames.[160] The purpose in a standard design is "to eliminate the bike as the excuse for why [the athlete] didn't do so well."[161]

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153. *See id.* (presenting questions of fairness, actual benefits and possible advantages in having special committee).

154. *See id.*

155. *See* Rushall, *supra* note 64, § 6 (describing fair standards that all athletes understand will further goal of competition being decided on merits, not costumes worn).

156. *See id.* (noting permeability requirement for competitive ski jumping suits).

157. *See id.* (noting in 1970s different forms of jumping suit materials and shapes provided advantages in ski jumping events). Officials and athletes acknowledged that the "technological advancements" surpassed the natural abilities of athletes. *See id.* The established rules require jumping suits to have a certain permeability, in order to reduce the "parachute effect." *See id.*

158. *See id.*

159. *See* Lazaroff, *supra* note 65, at 188 (supporting equipment standardization because unique nature of organized sports and need for self regulation). For a discussion on cases that have addressed courts' permissive approach to standardized rules, see *supra* notes 68-70, 129, 149.

160. *See* Clark & Milliken, *supra* note 9 (stating requirement that all bikes must have "same comparatively slow and inexpensive frame").

161. *Id.*

V. CONCLUSION

Technology has created controversy in the field of competitive athletics.[162] The technologies of today have the potential to not only alter the athlete but also alter the requirements of remaining competitive in the athletic arena.[163] Although technological innovations are accepted as a necessary element in sports' progression, it is necessary to ensure that their impact on sports is not without limits.[164]

Because no case law exists on the matter, the athletic bodies must maintain the integrity, safety and tradition of sport.[165] It is not essential to set forth one set of rules or standards for all sports. Instead, the respective sports must determine how to properly research and standardize their technological innovations. The popularity and devotion to athletics should not be overcome by controversy and debates because sports offer participants, fans and society an enjoyable experience to grow through its many positive societal attributes.[166]

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162. For examples of controversial technologies, see *supra* notes 75-114.

163. *See* Rushall, *supra* note 64.

164. *See* Lazaroff, *supra* note 65, at 162 (preventing fundamental alteration of sport); *see also* Cusimano, *supra* note 67, at 1063 (protecting safety and integrity of game).

165. *See* Lazaroff, *supra* note 65, at 162 (requiring sports organizations to police equipment).

166. *See* Mitten, *supra* note 2, at 999 (noting positive result sports have on society).